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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
STEPHANIE FRAHN, ET AL.	: EXAMINER: V.M. NERANGIS
SERIAL NO: 10/522,903	:
FILED: FEBRUARY 1, 2005	: GROUP ART UNIT: 1796
FOR: LACQUER FORMULATIONS	:

APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

This is an appeal from the Final Rejection of the claims dated July 27, 2010.

I. REAL PARTY IN INTEREST

The real party in interest is Degussa AG, by virtue of the assignment recorded at Reel/Frame 016318, frame 0922.

II. RELATED APPEALS AND INTERFERENCES

Appellants, Appellants' legal representative and their assignee are not aware of any appeals or interferences which will directly affect or be directly affected by or having a bearing on the Board's decision in this appeal.

III. STATUS OF THE CLAIMS

Claims 2, 6, 7, 11-13 and 18-20 are pending in this application and are appealed herein.

IV. STATUS OF AMENDMENTS

An amendment is filed herewith canceling Claims 14, 21 and 22. No other amendments have been filed subsequent to the mailing of the Final Rejection on July 27, 2010.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

As set forth in Claim 2, the present invention relates to a lacquer composition {page 1, line 18} comprising:

- (1) from 20 to 80 wt. % of a polymer composition comprising polyesters, polyacrylates, polymethacrylates, mixtures or copolymers thereof {page 1, lines 19-23 and page 2, line 22 to page 3, line 2};
- (2) from 0.5 to 25 wt. % of a silanized, structurally modified pyrogenic silica having attached to the surface thereof hexadecylsilyl groups {page 1, line 28 to page 2, line 4};
- (3) from 0 to 80 wt. % of one or more solvents {page 1, lines 24-27}; and
- (4) from 0 to 10 wt. % of an additive {page 2, lines 5-10}.

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The sole issue on appeal is whether Claims 2, 6, 7, 11-13 and 18-20 are unpatentable under 35 U.S.C. §103(a) over Bock (U.S. patent No. 6,020,419) in view of Ettlinger (U.S. patent No. 6,022,404).

VII. ARGUMENT

Amended claim 2 is directed to a lacquer composition comprising: (1) 20-80 wt. % of a polymer composition comprising polyesters, polyacrylates, polymethacrylates, mixtures or copolymers thereof; (2) 0.5-25 wt. % of a silanized, *structurally modified* pyrogenic silica having attached to the surface thereof *hexadecylsilyl* groups; (3) 0-80 wt. % of one or more solvents; and (4) 0-10 wt. % of an additive.

Bock describes a conventional (i.e., *non-structurally modified*) pyrogenic silica that has been surface-modified with hydrophobic groups, such as hexamethyldisilazane (Aerosil® R 812), octylsilyl groups (Aerosil® R 805) and dimethylsilyl groups (Aerosil® R 972) (see e.g., column 2, lines 50-67, column 3, lines 1-3 and 28-33 and 52-67, column 4, lines 8-18, column 7, lines 24-26 and 49-50, claims 1-6).

Ettlinger describes a pyrogenic mixed oxide containing two or more metal oxides selected from a plethora of various metal oxides including SiO₂, Al₂O₃, TiO₂, ZrO₂, Fe₂O₃, Nb₂O₅, V₂O₅, WO₃, SnO₂ and GeO₂, which has been surface-modified with one or more compounds selected from the *tremendously large genus* of groups (a) to (m) (See e.g., abstract, columns 1-3, claim 1). Group (c) describes a surface-modifying compound of formula X₃Si(C_nH_{2n+1}), wherein X is Cl or Br, and n is 1-20 (See e.g., column 1, lines 35-37). Ettlinger describes and exemplifies that the *particularly preferred* surface-modifying compounds are hexamethyldisilazane, trimethoxyoctylsilane, dimethylpolysiloxane and trimethoxypropylsilane (See e.g., Table 2).

The mere fact that a claimed species is encompassed by a prior art genus is not sufficient by itself to establish a *prima facie* case of obviousness. See e.g., *In re Baird*, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994); and *In re Jones*, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992). Any teaching or suggestion in the cited reference of a preferred species or subgenus that is significantly different in structure from the claimed species may weigh against a

determination of obviousness to select the claimed species. See e.g., *In re Baird*, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994). A *prima facie* case of obviousness requires that the prior art provide a skilled artisan with sufficient motivation and guidance to arrive at the claimed compounds. See e.g., *Takeda v. Alphapharm*, 83 USPQ2d 1169, 1174 (Fed. Cir. 2007)

Contrary to the Official Action, Ettlinger fails to provide a skilled artisan with sufficient motivation and guidance to *particularly select* the claimed hexadecylsilyl surface modifying group from either the *tremendously large genus* of groups (a) to (m), or the *particularly preferred* surface-modifying compounds (e.g., hexamethyldisilazane, trimethoxyoctylsilane, dimethylpolysiloxane and trimethoxypropylsilane), described and exemplified in Ettlinger for surface modifying the pyrogenic silica of Bock.

Accordingly, a skilled artisan would not have arrived at the claimed structurally modified pyrogenic silica having hexadecylsily groups attached to the surface thereof, based on the disclosures of Bock and Ettlinger, *absent impermissible hindsight reconstruction*, thereby precluding a *prima facie* case of obviousness.

Assuming *arguendo* that sufficient motivation and guidance is considered to have been provided by Bock and Ettlinger to direct a skilled artisan to arrive at the claimed structurally modified pyrogenic silica having hexadecylsily groups attached to the surface thereof, which is clearly not the case, such a case of obviousness is rebutted by a showing of superior properties.

As discussed in the present specification and shown by the comparative experimental data presented in Table 3 therein, Applicants have discovered that the *structurally modified* pyrogenic silica of Examples S1 and S2, which have *hexadecylsily* groups attached to the surface thereof in accordance with the present invention, exhibited superior properties with respect to improved scratch resistance and residual gloss without undesirable orange peel, as compared to the inferior properties exhibited by: (A) the *non-structurally modified* pyrogenic

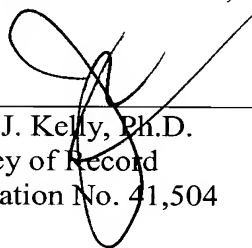
silica of Comparative Example S1, which has *hexadecylsilyl* groups attached to the surface thereof; (B) the *non*-structurally modified pyrogenic silica of Comparative Example S2, which has *octylsilyl* groups attached to the surface thereof; (C) the structurally modified pyrogenic silica of Examples S3 and S4, which have *octylsilyl* groups attached to the surface thereof; (D) the *non*-structurally modified pyrogenic silica of Comparative Examples S3 and S4, which have *dimethylsilyl* groups attached to the surface thereof; and (E) the structurally modified pyrogenic silica of Examples S5-S8, which have *dimethylsilyl* groups attached to the surface thereof.

Bock and Ettlinger, when considered in combination, fail to recognize that superior properties are achieved with the claimed structurally modified pyrogenic silica having hexadecylsilyl groups attached to the surface thereof in accordance with the present invention.

In view of the foregoing, the rejection of the claims under 35 U.S.C. §103(a) over Bock in view of Ettlinger should be reversed.

Respectfully submitted,

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CLAIMS APPENDIX

2. A lacquer composition comprising:

- (5) from 20 to 80 wt. % of a polymer composition comprising polyesters, polyacrylates, polymethacrylates, mixtures or copolymers thereof;
- (6) from 0.5 to 25 wt. % of a silanized, structurally modified pyrogenic silica having attached to the surface thereof hexadecylsilyl groups;
- (7) from 0 to 80 wt. % of one or more solvents; and
- (8) from 0 to 10 wt. % of an additive.

6. The lacquer composition according to claim 2, wherein said polymer composition comprises polymers having pendant functionalized hydroxyl groups capable of crosslinking.

7. The lacquer composition according to claim 6, wherein said polymer composition comprises two or more crosslinked copolymers.

11. The lacquer composition according to claim 2, wherein said solvent is present and is selected from the group consisting of hydrocarbons, alcohols, esters, ketones, amides, borates, silanes, water, and mixtures thereof.

12. The lacquer composition according to claim 2, wherein said solvent is present and is selected from the group consisting of aromatic hydrocarbons, aliphatic hydrocarbons, araliphatic hydrocarbons, cycloaliphatic hydrocarbons, halogenated hydrocarbons, methanol, ethanol, isopropanol, butanol, benzyl alcohol, diacetone alcohol, ethyl acetate, propyl acetate, butyl acetate, methoxypropyl acetate, butyl glycol acetate, phosphoric acid dibutyl ester, phosphoric acid tributyl ester, sulfonic acid esters, acetone, methyl ethyl ketone, methyl isobutyl ketone, cyclohexanone, N,N-dimethylformamide, N,N-dimethylacetamide, dimethyl sulfoxide, N-methylpyrrolidone, tetraethoxysilane, methyl-trimethoxysilane, 3-aminopropyl-trimethoxysilane, 3-aminopropyl-triethoxysilane, glycidyloxypropyl-trimethoxysilane, glycidyloxypropyl-triethoxysilane, borates, water, and mixtures thereof.

13. The lacquer composition according to claim 2, wherein said additive is present and includes additives selected from the group consisting of rheologic agents, stabilization agents, dispersability agents, deagglomeration agents, flowability agents, fillers, and pigments.

18. The lacquer composition according to claim 2, wherein said polymer composition is present in an amount of from 35 to 70 wt. %.

19. The lacquer composition according to claim 2, wherein said silanized, structurally modified pyrogenic silica is present in an amount of from 1 to 25 wt. %.

20. The lacquer composition according to claim 2, wherein said silanized, structurally modified pyrogenic silica is present in an amount of from 2 to 10 wt. %.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.